

PATENT ABSTRACTS OF JAPAN

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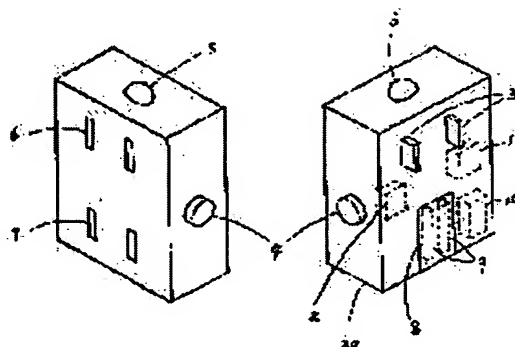
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 (22)Date of filing : 16.02.1995 (72)Inventor : ABE YOSHINOBU

(54) EARTHQUAKE CIRCUIT BREAKER FOR ELECTRIC APPLIANCE

(57)Abstract:

PURPOSE: To automatically interrupt the current of electric heater which causes damages during an earthquake.

CONSTITUTION: A circuit breaker having a built-in vibration sensor 1, a switch 2, a battery 9 and a charger 10 comprises a receptacle 6 which forms a closed circuit after an earthquake, a receptacle 7 which forms an open circuit after the earthquake, a lamp 5 which is lighted after the earthquake, a reset button 4, and an existing plug terminal 3 for inserting into receptacles. By doing this, a current of an electric heater which is dangerous during the earthquake can be automatically interrupted and at the same time a guide lamp can be turned on.



LEGAL STATUS

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CLAIMS

[Claim(s)]

[Claim 1] The earthquake breaker with a reset function characterized by making the current of electric appliances dangerous with earthquakes, such as an electric heater and an electric kotatsu, intercept automatically by detecting by sensors which contain the shake of an earthquake, such as a sway sensor and a piezo-electric sensor.

[Claim 2] The earthquake breaker with a reset function which intercepts automatically the current of electric appliances dangerous with earthquakes, such as an electric heater and an electric kotatsu, switches on automatically the lamp built in coincidence, and is characterized by making the light switch on by detecting by sensors which contain the shake of an earthquake, such as a sway sensor and a piezo-electric sensor.

[Claim 3] The earthquake breaker with a reset function which switches on automatically the lamp which the current of electric appliances dangerous with earthquakes, such as an electric heater and an electric kotatsu, is intercepted automatically, and radio etc. puts the switch of required electric appliances into coincidence automatically in case of an earthquake, and is built in coincidence by detecting by sensors which contain the shake of an earthquake, such as a sway sensor and a piezo-electric sensor, and is characterized by making the light switch on.

[Claim 4] The generic claim 2 characterized by intercepting automatically the current of electric appliances dangerous with earthquakes, such as an electric heater and an electric kotatsu, switching on automatically lamps, such as a guide light built in coincidence, and making the light switch on by cells to build in, such as a dry cell or a charge cell, by detecting by sensors which contain the shake of an earthquake, such as a sway sensor and a piezo-electric sensor, or an earthquake breaker with a reset function given in three.

[Claim 5] The generic claims 2 and 3 of the plug socket plug mold which intercepts automatically the current of electric appliances dangerous with earthquakes, such as an electric heater and an electric kotatsu, switches on automatically the lamp built in coincidence, and is characterized by making the light switch on by detecting by sensors which contain the shake of an earthquake, such as a sway sensor and a piezo-electric sensor, or an earthquake breaker given in four.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the earthquake breaker which makes a dangerous electric heater etc. an open circuit automatically in case of an earthquake, and makes lamps, such as required radio and a guide light, a closed circuit conversely in case of an earthquake.

[0002]

[Description of the Prior Art] Although there was an interrupting device which can suspend an oilstove and a town gas product automatically in case of an earthquake conventionally, the switch which makes electric products, such as a dangerous electric heater, an open circuit automatically in case of an earthquake is not manufactured. Conversely, the switch which turns on only a required guide light automatically in case of an earthquake was marketed.

[0003]

[The technical problem which invention makes solution *****] Conventionally, in case of an earthquake, the dangerous electric heater etc. was automatically made into the open circuit, the current was intercepted, and there was nothing that can turn on lamps, such as required radio and a guide light, to coincidence conversely in case of an earthquake. Moreover, there was nothing that can turn on lamps, such as a guide light, by the cell built in also in the time of interruption of service. Furthermore, there was no earthquake breaker of the type which can be inserted in a 100 V volt plug socket etc. This invention not only carries out current cutoff of the dangerous electric heater etc. automatically in case of an earthquake, but Lamps, such as required radio and a guide light, are automatically switched on in case of an earthquake. Or it aims at carrying out plug socket **, being crowded and offering the earthquake breaker of a mold so that practical use may be presented only by inserting in a further established plug socket for the purpose of the ability turning on lamps, such as a guide light built in by the appearance which operates also in the case of interruption of service in case of an earthquake, and the cell to build in.

[0004]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, in the earthquake breaker of this invention, it has sensors which detect an earthquake, such as a sway sensor and a piezo-electric sensor, the switch interlocked with a sensor, the terminal or plug socket which serves as an open circuit in case of an earthquake, and the reset button which returns the built-in switch which once operated for the earthquake etc. to an initial state. Moreover, it has the lamp automatically turned on in claim -2 in case of an earthquake. It has the terminal or plug socket which serves as a closed circuit in claim -3 in case of an earthquake. It has the cell which makes a built-in lamp turn on in claim -4. Furthermore, it has the terminal which can be inserted in an established plug socket in claim -5.

[0005]

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TECHNICAL FIELD

[Industrial Application] This invention relates to the earthquake breaker which makes a dangerous electric heater etc. an open circuit automatically in case of an earthquake, and makes lamps, such as required radio and a guide light, a closed circuit conversely in case of an earthquake.

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EFFECT OF THE INVENTION

[Effect of the Invention] Since this invention is constituted as explained above, it has the effectiveness taken below. When the vibration more than fixed joins the earthquake breaker 20 according to an earthquake by inserting the earthquake breaker 20 in the established plug socket, the sway sensor 1 to build in detects and the switch 2 built in automatically operates. Even if the current of a dangerous electric product should be intercepted in case of an earthquake and house collapse etc. should produce an electric heater, an electric kotatsu, etc. which were inserted in the plug socket 7 which serves as an open circuit in an earthquake by this, an outbreak of a fire can be prevented beforehand. Moreover, a current flows to an electrical-and-electric-equipment product required of an earthquake in case of earthquakes, such as radio, a guide light, etc. which were inserted in the plug socket 6 used as a closed circuit, and the lamp 5 to build in, and required information and the path to refuge opening are known. Moreover, since it turns out that the earthquake breaker 20 is an operating state easily only by seeing by the eye since the lamp 5 to build in lights up and the interior of a room is illuminated brightly in night etc., a falling object can be avoided or it can take refuge in insurance. Therefore, not all electric products can not necessarily be made into an open circuit in case of an earthquake, but a required electric product can be made into a closed circuit in case of an earthquake. Moreover, power sources, such as 100 etc. volts, can be shut off even if, and the built-in lamp 5 can be made to turn on by the cell 9 also in the state of interruption of service from storing a cell 9. In this case, if the earthquake breaker 20 is drawn out from an established plug socket, it is usable also as an extraordinary electric light [portable] and and. By lengthening an earthquake breaker from an established plug socket, and striking it strongly overarm even if, also in the cases, such as disaster, for example, a fire etc., which is not an earthquake, a sway sensor 1 can be operated, the built-in lamp 5 can be made to be able to turn on, and it can also consider as the extraordinary electric light [portable] and and. In addition, when a cell 9 is a rechargeable battery, it is always in the completion condition of charge by the battery charger 10 which rectifies and low-battery-izes a 100-volt power source etc., and is always usable. When the earthquake breaker 20 operates accidentally, it operates in an earthquake and the switch 2 built in by pushing a reset button 4 can be returned to an initial state to return as an original earthquake breaker again. In this example, although the plug socket plug mold was described, it can use for the breaker usually installed in the wall surface upper part, of course, and naturally it is also possible to build in the interior of an electric product further, and these are also contained in this invention.

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TECHNICAL PROBLEM

[The technical problem which invention makes solution *****] Conventionally, in case of an earthquake, the dangerous electric heater etc. was automatically made into the open circuit, the current was intercepted, and there was nothing that can turn on lamps, such as required radio and a guide light, to coincidence conversely in case of an earthquake. Moreover, there was nothing that can turn on lamps, such as a guide light, by the cell built in also in the time of interruption of service. Furthermore, there was no earthquake breaker of the type which can be inserted in a 100 V volt plug socket etc. This invention not only carries out current cutoff of the dangerous electric heater etc. automatically in case of an earthquake, but Lamps, such as required radio and a guide light, are automatically switched on in case of an earthquake. Or it aims at carrying out plug socket **, being crowded and offering the earthquake breaker of a mold so that practical use may be presented only by inserting in a further established plug socket for the purpose of the ability turning on lamps, such as a guide light built in by the appearance which operates also in the case of interruption of service in case of an earthquake, and the cell to build in.

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MEANS

[Means for Solving the Problem] In order to attain the above-mentioned purpose, in the earthquake breaker of this invention, it has sensors which detect an earthquake, such as a sway sensor and a piezo-electric sensor, the switch interlocked with a sensor, the terminal or plug socket which serves as an open circuit in case of an earthquake, and the reset button which returns the built-in switch which once operated for the earthquake etc. to an initial state. Moreover, it has the lamp automatically turned on in claim -2 in case of an earthquake. It has the terminal or plug socket which serves as a closed circuit in claim -3 in case of an earthquake. It has the cell which makes a built-in lamp turn on in claim -4. Furthermore, it has the terminal which can be inserted in an established plug socket in claim -5.

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OPERATION

[Function] The switch of dangerous electric products, such as the electric heater which the switch built in with the sway sensor to build in if a strong earthquake occurs operated, and was inserted in the terminal or the plug socket to which a switch is turned off in an earthquake, and was operating before the earthquake, and an electric kotatsu, is turned off automatically, and the switch of a required electric product is automatically turned on in case of earthquakes, such as radio, a guide light, etc. inserted in the terminal or the plug socket which is conversely turned on in an earthquake. When canceling, it returns to an initial state by pushing a reset button. Moreover, the LGT of the lamps, such as a guide light built in in the earthquake breaker, can be carried out at the earthquake time. Furthermore, that the power source itself, such as 100 etc. volts, is that the electric current is cut off according to an earthquake can also turn on lamps, such as a guide light which is assumed and is built in by the built-in cell.

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EXAMPLE

[Example] If an example is explained with reference to a drawing, in drawing 1, the switch 2 which operates with a sway sensor 1 and a sway sensor 1 to the earthquake breaker 20 is built in. Moreover, the charge type or using-up-type cell 9 is stored in the cell storing section 8. The battery charger 10 which consists of a transformer or a rectifier is built in rechargeable batteries. Furthermore, it becomes an open circuit, and plug socket ** is carried out, and it is crowded [it becomes a closed circuit, plug socket ** is carried out and it is crowded with an earthquake, and] with opening 6 and an earthquake, and consists of opening 7, a reset button 4, a lamp 5, and the established plug socket snap-on eyelet terminal 3.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective view of an earthquake breaker.

[Description of Notations]

1 Sway Sensor

2 Switch

3 Established Plug Socket Snap-on Eyelet Terminal

4 Reset Button

5 Lamp

6 It Becomes Closed Circuit, and Carry Out Plug Socket **, and it is Crowded with Earthquake, and is Opening.

7 It Becomes Open Circuit, and Carry Out Plug Socket **, and it is Crowded with Earthquake, and is Opening.

8 Cell Storing Section

9 Cell

10 Battery Charger

20 Earthquake Breaker

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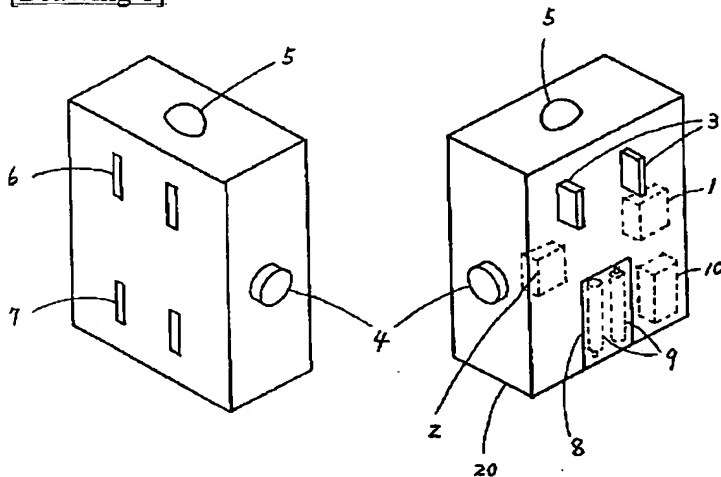
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DRAWINGS

[Drawing 1]



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